Of the 63 operations referred to above, 44 were performed immediately, 19 secondarily. The former gave 32 cures, 12 deaths; the latter 14 cures, 5 deaths. Thus the proportion of cures after secondary amputation was not less satisfactory than that after immediate.—*British and Foreign Med. Rev.* from *Gaz. Méd de Paris.* Feb. 13, 1841.

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62. *Statistical account of seventy-five cases of amputation, performed on seventy-three patients at the Northern Hospital, Liverpool,* from March 1834, to March 1841.—Edward Parker, Esq. states that of the total number of amputations, 75 on 73 patients, 53 were cured and 20 died; being 1 in $3\frac{13}{20}$.

"49 were accidents, of which 14 died, being 1 in $3\frac{1}{2}$, 24 diseases, of which 6 died, being 1 in 4.

"Of the accidents, 40 were primary (performed within 24 hours), of which 8 died, being 1 in 5; 9 were secondary, of which 6 died, being 2 in 3.

"Of the primary amputations, 29 were on the lower extremity, of which 6 died, being 1 in $4\frac{8}{10}$; 11 were on the upper extremity, of which 2 died, being 1 in $5\frac{1}{2}$.

"Of the secondary amputations, 7 were on the lower extremity, of which 4 died; 2 were on the upper, both of which died.

"Of the amputations for diseases, 21 were of the lower extremity, of which 5 died, being 1 in $4\frac{1}{5}$; 3 were of the upper extremity, of which 1 died.

Of the whole number of amputations, 57 were on the lower extremity, of which 15 died, being 1 in $3\frac{3}{10}$; 16 were on the upper extremity, of which 5 died, being 1 in $3\frac{1}{5}$.

"*Below knee.*—28 for accidents, of which 8 died; 9 for diseases, of which 3 died.

"*Above knee.*—8 for accidents, of which 2 died; 12 for diseases, of which 2 died.

"*Below elbow.*—9 for accidents, of which 3 died.

"*Above elbow.*—4 for accidents, of which 1 died; 3 for diseases, of which 1 died.

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|---|---|---|---|
| 20 were under | 20 years of age, of which number | 18 were cured, and | 2 died. |
| 15 were between | 20 and 30 | 12 | 3 |
| 13 | 30 and 40 | 8 | 5 |
| 10 | 40 and 50 | 7 | 3 |
| 12 | 50 and 60 | 5 | 7 |
| 1 | 60 and 70 | 1 | 0 |
| 71 | | 51 | 20 |

Of two of the patients the age is not mentioned.

"From a consideration of the foregoing tables, I think the following conclusions may be drawn:—

1st. That amputation is a more dangerous operation than is generally supposed, the proportion of fatal cases being 1 in $3\frac{13}{20}$.

2d. "That it is more successful when performed for diseases than for accidents.

3d. "That secondary is always much more fatal than primary amputation.

4th. "That amputation of the lower is much more fatal than of the upper extremity.

5th. "That the danger increases with the age of the patient.—*London Med. Gaz.* May, 1841.

## ANIMAL CHEMISTRY.

63. *On the Chemical Analysis of the Blood in its Morbid Condition.* By Dr. Louis Mandl.—The object of this series of papers is to point out the defects and fallacies of the present modes of analyzing the blood, and especially of estimating the *quantities* of its several principal constituents.

1. Three methods have been most commonly employed to separate the fibrine, but all are fallacious. The first consists in squeezing the clot of blood in linen, so as to get rid of its serum, and then repeatedly washing the remainder. Now the *clot* of blood has by no means always the same characters; some clots are hard and dense, and can only with difficulty be broken up, and these may certainly have all their fibrine, which forms compact stringy masses, retained within the linen. But others are soft and friable, and when these are broken up and squeezed, numberless particles of fibrine pass through the fine meshes of the linen, and what remains is but a small portion of what really existed in the blood. Independently, therefore, of the varying effects of more or less force in pressing the clot, and of the coarseness or fineness of the linen used, it is impossible that by this method, (which was generally employed by M. Denis,) any just idea should be formed of the respective quantities of fibrine in coagula whose physical qualities are different; for in all soft coagula, the fibrine breaks up into pieces small enough to pass through the linen with the serum and colouring matter.

The second method, by stirring the blood, is not less defective. Besides that, even under the best of circumstances, it is not so easy to stir the blood as to get all its fibrine in shreds, here again as in the preceding case the fibrine may be in such a state as to render its separation impossible. In blood mixed with pus, for example, it forms in coagulating particles which are either so small that they can hardly be seen, or pieces which stick to the walls of the vessel, or swim in the rest of the blood, and cannot possibly be separated from it. And in many other circumstances a similar condition exists in a less degree, so that this method can be employed only in cases in which the fibrine is disposed to coagulate firmly and in large masses, and has not its tendency to become solid, interfered with by the presence of purulent, or saline, or other substances in excess in the blood.

The method of Berzelius, that of compressing slices of the coagulum in blotting paper, and when they have ceased to give out moisture, washing them till they are colourless, is open to different but almost equal objections. In washing the remains of the coagulum one of two things will happen, either the blood-globules that are retained in it will be washed out entire, and then they will carry with them small pieces of the fibrine itself, or else their fluid contents and their colouring matter only will be removed, and their own membranes and those of their nuclei (which cannct be chemically distinguished from fibrine) will remain. In the former case the quantity of fibrine will appear less than it really was; in the latter it will seem more, perhaps much more; nor can any dexterity of manipulation avoid these errors. Besides from one kind of clot, (the firm one of inflammatory blood,) it is almost impossible to wash away all the globules without breaking it up; and from others (the softer kinds formed in typhoid fever, &c.) the fibrine separates sometimes in particles almost as small as the globules themselves, and cannot be retained on a filter; numberless particles of it may be detected with the microscope in each portion of water that passes through in the process of washing, and many more when (as is commonly the case) the fibrine is washed, not on a filter, but in a vessel of water.

In whatever method it be obtained, the fibrine is subsequently macerated for a considerable time in water, in which, if the process be contained for twelve or more hours, as it commonly is, decomposition takes place, the water becoming turbid, and the fibrine gelatinous. And after this it has to be dried, an operation requiring great delicacy and judgment to ensure that at the end of it water shall not be still retained in the organic substance which so readily absorbs it.

And after all it is very doubtful whether, under the best of circumstances the fibrine extracted from the blood is all that it really contained; for none of the analyses yet published take into account that which in all probability exists in the envelopes and contents of the globules, and which may well amount to more than there is in the *liquor sanguinis*. For several things are quite inexplicable on the supposition that as commonly stated there are only three parts of fibrine in 1000 of blood; as, for example, the immense quantities effused in false membranes, amounting in some cases to more than the whole mass of blood is said to contain, and many others.

If it be said that in spite of all these sources of fallacy the analyses of different chemists closely accord; reference need only be made to those analyses, and it will appear that the quantities of fibrine said to exist vary from 0.75 (Berzelius) to 4.96 (Müller) parts in 1000. Besides these analyses were made on healthy specimens of blood; the difficulties are greatly increased when it is in a morbid state, when the determination of its quantity of fibrine is most important.

2. The composition of the globules is as yet rather uncertain, but the author has little doubt that their contents are in part fibrine, by the coagulation of which the nucleus is formed; and he thinks that their membranes are also fibrine, coloured with hematosine. Now, as already stated, this fibrine within the globules has not, in any analysis hitherto published, been taken notice of; nor is it right to estimate its quantity from that of the albumen (as it has been supposed to be) which chemists have obtained from the globules; for it is difficult in any case to collect all the globules in a sample of blood; a number of them always float in the serum, and the more the softer the clot is, so that in many cases the serum itself is deep red; and moreover, in the ordinary plans of treatment, the clot is never obtained completely free from serum, and therefore from a greater quantity of albuminous matter than properly belongs to its globules. In short there is not at present any method known by which the globules can be all removed from a portion of blood, and obtained separately from its serum and other principles; and there cannot therefore be any certainty in the calculations of their weight or of the quantity of fibrine or albumen which they contain.

3. The fallacies in the analysis of the serum depend chiefly on the quantity of globules and of portions of fibrine that may be suspended in it. These in the healthy state of the blood are unimportant, but in its diseased states they may give rise to considerable errors.

In the next division of his subject the author treats of the coagulation of the blood, and the formation of the buffy coat, of the chemical nature of which, he rightly says, nothing is at present known. [But under this head we find nothing worthy of being abstracted.]

In the application of his objections, M. Mandl takes two classes of cases, namely, those in which the blood is said to be poor in fibrine, including scurvy, putrid fevers, typhoid fevers, &c., and those in which it is described as rich in globules. For the first the quantity of fibrine will appear small in all cases in which a firm clot does not form, that is, not only when there is really little fibrine, but when that which does exist, after coagulating, does not contract and form a dense hard clot. And this may depend on the presence of pus or other morbid fluids in the blood, or, still more probably, on an excess of alkaline salts. The latter are known to exist in excess in scurvy, and perhaps may be found so in the other diseases in which the blood has been less carefully analyzed. At any rate it is certain that we have at present no means of ascertaining the real quantity of fibrine in a soft clot, and therefore no right to assume a deficiency of it in any cases till the softness of the clot is proved not to depend on some other cause than that deficiency. Similar difficulties attend the appreciation of the true quantity of globules; and hence the diversities of the statements of authors respecting their increase or decrease in different diseases.

The last part of these papers contains general reflections on the application of the chemical researches on the blood to pathology. [But in this also the remarks are trivial. Indeed, the author has evidently much more skill in finding fault than in improving defects. We have ourselves long thought that in the matter of the blood, physiologists have too implicitly received the statements of chemists; and we hope that the brief abstract we have given of M. Mandl's papers, though they do no more than point out the numerous and unavoidable fallacies of these analyses, will engender caution in drawing conclusions from such evidently insecure premises.]—*Brit. and For. Med. Rev.*, from *Archives Gén.*, Dec. 1840, Jan. and Feb. 1841.

## MISCELLANEOUS.

64. *Periodical Medical Literature—Quarterly and Weekly Journals.*—The following remarks, extracted from an address delivered at the Anniversary meeting of the Southern District Branch of the Provincial Medical and Surgical Association, by Dr. M. CAROGHER, appear to us to exhibit a just view of the value of periodical medical literature, and of the distinct aim and scope of Quarterly and Hebdomadal Journals.

"Periodical literature is one of the most serviceable means by which the great object before referred to, namely, the diffusion over the wide extent of the empire of the knowledge that is daily accumulating, is accomplished. Yet this object is not gained by the ordinary periodical literature of the day, especially by *that* which appears at very short intervals, without some accompanying inconveniences. There is apt to be too little time for the separation of the chaff from the grain—too little selection—too little discrimination between that which is merely of passing interest, and that which, though prolix, or even heavy to the reader, is of paramount importance to the steady advancement of medical science. It should never be forgotten that the mere gratification of the reader, by temporary motion, is not the test by which the utility of a medical periodical is to be judged. It should have higher aims, though these be not so readily appreciated by the young and inexperienced. To be found short and interesting, are the tokens which draw forth approbation from the younger reader; "long and dry" are the words by which he is too apt to condemn, without considering whether the subject be such as can be treated of advantageously, without long details or dry analysis.

"The conciseness of direct assertion, the summariness of an authoritative yea or nay, contrast pleasantly with the tediousness of exposition by proof, of the balance of conflicting evidence, or of the details of experiment. Yet I know I may for the present safely violate the rule I would advocate, and take your permission to affirm, without further preamble, that the short dictum of authority has not been more remarkable in past times, for retarding the progress of all kinds of science, than the careful exposition of inductive or experimental evidence for advancing it.

"The quarterly medical periodicals stand nearly in the same relation to the monthly and hebdomadal medical journals, as the political periodicals to the daily press. Their task is to sift, compare, and digest the particulars collected and spread about by their more hurried brethren, to correct errors, to reconcile contradictions, to draw back to the right path of investigation those whom the ardour of youth, the love of novelty, the confidence of inexperience, have led astray, (though otherwise profitable labourers in the cause of improvement,) to view from a more commanding height the labours which are going on around; to estimate more deliberately the importance of what is witnessed on every side relating to the past, the present, or the future progress of medicine; to apply with that skill, which solid judgment (aided by more careful training, or especial advantages of talent or opportunity, in regard to the several subjects under consideration,) can alone supply—to apply, I say; the actual state of each department or object of knowledge, so as to test and appreciate the merits of new discoveries, whether these be speculative or practical.

"Such, it appears to me, are the chief objects which the quarterly medical periodicals are calculated to serve, in a far higher degree than is possible for those that appear under the hurry of shorter intervals, the utility of which, however, in their own sphere, is not for a moment to be questioned. I believe that the rise of the weekly medical periodicals, concurrently with some other favourable circumstances, in our times, has wrought great and important changes in the